# Fort Gillem Installation Action Plan

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Fort Gillem Installation Action Plan	September 2004
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# FY05

### Fort Gillem

Atlanta, Georgia

Installation Action Plan

# Statement of Purpose

The purpose of the Installation Action Plan (IAP) is to outline the total multi-year Installation Restoration Program for an installation. The plan will identify environmental cleanup requirements at each site or area of concern, and propose a comprehensive, installation-wide approach, with associated costs and schedules, to conduct investigations and necessary remedial actions.

The IRP is specifically focused at contamination resulting from past activities, and is funded by the centrally-managed Environmental Restoration, Army (ER,A) budget account. Cleanup activities directed at contamination primarily resulting from current operations are separately funded and managed, and, although mentioned where relevant, will not generally be discussed in detail in an IAP.

In an effort to coordinate planning information between the IRP manager, major army commands (MACOMs), installations, executing agencies, regulatory agencies, and the public, an IAP has been completed for Fort Gillem. The IAP is also used to track requirements, schedules and budgets for all major Army Installation Restoration Programs.

All site specific funding and schedule information has been prepared according to projected overall FORSCOM funding levels and is therefore subject to change. Under current project funding, all remedial actions will be completed for Fort Gillem by the end of 2010. This plan is based on current knowledge of the sites. As additional information is obtained, the IAP will be amended to address areas of concern.

The following agencies contributed to the formulation and completion of this Installation Action Plan:

Calibre/AEC
Engineering & Environment, Inc.
Forts McPherson & Gillem
GA EPD
GA EPD HWMB
Shaw E&I
U S Army Corps of Engineers, Savannah District
U S Army Environmental Center
USA Garrison, SJA

# Table of Contents

### Acronyms & Abbreviations

SUMMARY	
Installation Action Plan Summary	1
INSTALLATION INFORMATION & DESCRIPTION	
Installation Information	1
Installation Description	2
CONTAMINATION ASSESSMENT	
Contamination Assessment	1
List of Previous Studies	2
SITE DESCRIPTIONS	
FTG - 01 North Landfill Area (MOU 100-800)	1
FTG - 01 North Landfill Area (MOU 100)	
FTG - 01 North Landfill Area (MOU 200)	
FTG - 01 North Landfill Area (MOU 300, 400)	. 5
FTG - 01 North Landfill Area (MOU 500)	
FTG - 01 North Landfill Area (MOU 600)	
FTG - 01 North Landfill Area (MOU 700, 800	. 8
FTG - 02 SE Area Dump Site	
FTG - 03 900 Area Industrial Wastewater Treatment Plant (IWTP)	10
FTG - 04 900 Area Solvent Disposal Pit (SDP)/Former 900 Building	11
FTG - 05 900 Area Heating Plant	
FTG - 06 900 Area Vehicle Wash Rack	
FTG - 07 Burial Site No. 1	
FTG - 08 Burial Site No. 2	
FTG - 09 Burial Site No. 3	
FTG - 10 Burial Site No. 4	
FTG - 11 Unexploded Ordnance Site	
FTG - 12 Underground Storage Tank (UST) Sites	
FTG - 13 Western Sewage Treatment Plant	
FTG - 14 Eastern Sewage Treatment Plant	20
SCHEDULE	
Past and Future IRP Phase Completion Milestones	. 1
REMEDIATION ACTIVITIES	
Past, Current, & Future Removal / Interim Remedial Action / Remedial Actions	. 1
COMMUNITY INVOLVEMENT	
Restoration Advisory Board Status	. 1

### Acronyms & Abbreviations

**AAFES** Army, and Air Force Exchange Service

**ADL** Arthur D. Little, Inc.

**AEC** Army Environmental Center

**AEDB-R** Army Environmental Data Base-Restoration

AOC Area of Concern

AST Aboveground Storage Tank
BLRA Baseline Risk Assessment
BRAC Base Realignment and Closure

BTEX Benzene, Toulene, Ethylbenzene, and Total Xylenes

**CAP** Corrective Action Plan

CERCLA Comprehensive Environmental Response, Compensation and Liability Act of 1980

**cfm** cubic feet per minute

**CMI** Corrective Measures Investigation

**CMS** Corrective Measures Study

**cy** cubic yards

DA Department of the Army DD Decision Document

DERA Defense Environmental Restoration Account
DERP Defense Environmental Restoration Program

**DIS** Directorate of Installation Support

DOD Department of Defense
DOL Directorate of Logistics
DPW Directorate of Public Works

**DRMO** Defense Reutilization and Marketing Office

**DSERTS** Defense Site Environmental Restoration Tracking System

**DWSP** Drinking Water Surveillance Program

EPA United States Environmental Protection Agency
ER,A Environmental Restoration, Army (formerly DERA)
ESE Environmental Science and Engineering, Inc.

**ESI** Expanded Site Inspection

**ESTP** Eastern Sewage Treatment Plant FEMA Federal Emergency Managment Agency

FORSCOM U S Army Forces Command

**FS** Feasibility Study

FTG DSERTS Database Code for Fort Gillem

**FY** Fiscal Year

GAEPD Georgia Department of Natural Resources, Environmental Protection Division

G&M Geraghty & Miller
HRS Hazard Ranking System
HSRA Hazardous Site Response Act

HW Hazardous Waste
IAG Interagency Agreement
IAP Installation Action Plan
IL Independent Locations
IR Information Repositories
IRA Interim Remedial Action

IRP Installation Restoration Program
IWTP Industrial Wastewater Treatment Plant

LTM Long Term Monitoring LTO Long Term Operation

### (Acronyms & Abbreviations)

MACOM Major Army Command

MCL Maximum Contaminant Limit
MNA Monitored Natural Attenuation

MOU Major Operable Unit
MU Manageable Units

NBC Nuclear, Biological and Chemical NC HSRA Notification Criteria for Soil

NE Not Evaluated
NFA No Further Action

**NFRAP** No Further Remedial Action Planned

NLA North Landfill Area
NOV Notice of Violation

NPDES National Pollutant Discharge Elimination System

NPL National Priorities List

OB/OD Open Burning / Open Detonation
OMA Operations and Maintenance - Army

**OMAR** Operations and Maintenance - Army Reserve

**OU** Operable Unit

OWS Oil and Water Separator
PA Preliminary Assessment

PAH Polycyclic Aromatic Hydrocarbons

PCB Polychlorinated Biphenyls

PCE Perchloroethylene/tetrachloroethene

POL Petroleum, Oil and Lubricants

ppbPPMParts per BillionParts per Million

PY Prior Year Remedial A

RA Remedial Action
RAB Restoration Advisory Board
RAO Remedial Action - Operation

RC Response Complete

**RCRA** Resource Conservation and Recovery Act

**RD** Remedial Design

**REM** Removal

RFA RCRA Facility Assessment
RFI RCRA Facility Investigation
RI Remedial Investigation
RIP Remedy in Place
ROD Record of Decision

RRSE Relative Risk Site Evaluation
RSC Regional Support Command

**RV** Reference Value

**S&A** Supervision and Administration **S&R** Supervision and Remediation

**SDP** Solvent Disposal Pit **SEBS** Southeast Burial Sites

Site Inspection

SJA Staff Judge Advocate
SOW Scope of Work

STP Sewage Treatment Plant

### **Acronyms & Abbreviations**

**SVE** Soil Vapor Extraction

**SVOC** Semivolatile Organic Compounds **SWMU** Solid Waste Management Unit

TC HSRA Trigger Concentrations for Groundwater

TCE Trichloroethene

TCLP Toxicity Characteristic Leachate Procedure
TERC Total Environmental Restoration Contract

TPH Total Petroleum Hydrocarbons
TRC Technical Review Committee

**USACE** United States Army Corps of Engineers

**USACHPPM** United States Army Center for Health Promotion and Preventive Medicine

**USAEC** United States Army Environmental Center

**USAEHA** United States Army Environmental Hygiene Agency

**USAR** United States Army Reserve

**USARC** United States Army Reserve Command

**USATHMA** United States Army Toxic and Hazardous Material Agency (replaced by AEC)

UST Underground Storage Tank
UXO Unexploded Ordnance
VOC Volatile Organic Compounds

VWR Vehicle Wash Rack

WSTP Western Sewage Treatment Plant



**STATUS:** Non-NPL, State Administrative Order; HRS of 25.1

TOTAL # OF DSERTS SITES: 13
ACTIVE ER,A SITES: 6
RESPONSE COMPLETE (RC) SITES: 7

**DIFFERENT SITE TYPES:** 1 Disposal Pit/Dry Well 6 Landfills

1 Washrack2 Sewage Treatment Plants1 Underground Storage Tank1 Waste Treatment Plant

1 Unexploded Munitions/ Ordnance

CONTAMINANTS OF CONCERN: Chlorinated Solvents, PAHs, Metals, VOCs, Pesticides, POL

**MEDIA OF CONCERN:** Soil, Ground Water, Surface Water, Sediment

COMPLETED REM/IRA/RA: Removed 42,000 gallon UST (Heating Plant), 1996 Removal of underground piping from 900 Area, 1996

Bioremediated contaminated soils at the SDP (900 Area), 1996

FTG-01, MOU 800; removed drums, 1998 & 2000

FTG-01, MOU 600; excavated 27,000 tons of lead contaminated

soil, 2001

FTG-01, MOU 200; excavated 100 drums and 4,000 tons of VOC-

contaminated soil, 2001

CURRENT IRP PHASES: RI/FS at 4 sites RD at 1 site RD at 1 site

PROJECTED IRP PHASES:

RI/FS at 5 sites

RA at 2 sites

RA (O) at 2 sites

LTM at 2 sites

IDENTIFIED POSSIBLE REM/IRA/RA: IRA at FTG-01 (MOU 100, 200, 600), 07

RA at FTG-01(MOU 100), 09

**DURATION:** YEAR OF INCEPTION: 1980

YEAR OF IRP COMPLETION EXCLUDING RAO/LTM: 2010 YEAR OF IRP COMPLETION INCLUDING RAO/LTM: 2032

# Installation Information

#### SITE DESCRIPTION:

Fort Gillem (FTG) is a sub-installation of Fort McPherson and is located adjacent to Forest Park, in Clayton County, one of the counties comprising the metropolitan Atlanta area. The city of Lake City is located on the western boundary and Hartsfield International Airport is situated approximately two miles northwest of the installation. FTG comprises approximately 1,426 acres and is surrounded by residential and commercial development.

**COMMAND ORGANIZATION:** 

Major Command: U.S. Army Forces Command (FORSCOM)

Installation: Fort Gillem, Georgia

IRP EXECUTING AGENCIES:

Fort McPherson and U.S. Army Corps of Engineers, Savannah District

REGULATORY PARTICIPATION:

**Federal:** U.S. Environmental Protection Agency, Region IV **State:** Georgia Department of Natural Resources, Environmental Protection Division (GA EPD)

**REGULATORY STATUS:** 

Non-NPL installation with an administrative order issued September 10, 1993 from GA EPD to address surface water, soil and ground water contamination at the North Landfill Area (NLA)

MAJOR CHANGES TO IAP FROM PREVIOUS YEAR:

- Identified groundwater contamination in the bedrock in off-site areas north of the NLA and south of the SEBS.
- Identified groundwater contamination in the overburden in off-site areas northwest of the NLA.

### Installation Description

Fort Gillem was created in 1940 with the simultaneous construction of the Atlanta Quartermaster Depot and the Atlanta Ordnance Depot. Major portions of these installations were completed in December 1942. The two installations operated as separate facilities until April 1, 1948, when they were consolidated physically and operationally at the Atlanta Army Depot, which was a subcommand of the Army Materiel Command. The Atlanta Army Depot was deactivated on June 28, 1974 and renamed Fort Gillem in honor of Lieutenant General Alvin C. Gillem, former commander of the Third U. S. Army. Administrative control was transferred to Fort McPherson.

The installation was active through World War II, the Korean War, the Berlin Crisis, the Vietnam War, and Operation Desert Shield/Desert Storm during the Persian Gulf conflict. The installation was responsible for providing the Army with weapons and equipment needs, research and development, procurement, production, storage, distribution, inventory management, maintenance, and disposal of surplus and waste materials during both peacetime and wartime. In 1967, a logistical training battalion was activated at the installation to train men and women for Army assignments during the Vietnam War. The installation also provided special training for Medical Service Corps personnel.

Fort Gillem currently is a sub-post of Fort McPherson. Fort Gillem supports U. S. Army Forces Command (FORSCOM) readiness missions and is home for many FORSCOM and Fort McPherson activities. The Eastern Distribution Region of the Army and Air Force Exchange Service (AAFES) uses approximately 60 acres for storage. Fort Gillem also supports the Federal Emergency Management Agency (FEMA) disaster relief activities by providing warehouse and office space.

### Contamination Assessment

The communities surrounding Fort Gillem are well established. The residential housing that borders the northern boundaries of Fort Gillem includes the Forest Park and Conley communities. Mixed commercial/industrial properties border along the eastern Highway 23/42 (Moreland Avenue) corridor and southwestern Highway 54 (Jonesboro Road) corridor. The southern installation boundary borders mixed use areas comprised of residential, commercial and industrial properties along Forest Parkway.

Although historical records describing hazardous material use, storage and disposal are not available from 1940 to the mid 1960s, records do indicate that past industrial operations were centered in the 400 and 900 Areas. Investigations in the 900 Area identified isolated sources of contamination that were removed, although solvent contamination still remains in the groundwater.

Investigations during the 1990s in the 900 Area identified a source of contamination at the Solvent Disposal Pit (FTG-04) located on the north side of the former 900 Building. Approximately 1,000 cubic yards of contaminated soil was excavated and treated by ex-situ bioremediation. Some organic contamination remains in the groundwater.

Investigations since the 1980s in the North Landfill Area (NLA) have identified contamination in soil, groundwater, and surface water. Volatile organic compounds (VOCs), principally chlorinated solvents, are the most widespread group of contaminants, with metals present to a lesser degree. Two streams drain the NLA and both streams flow into the residential area north of the post. Off-post areas adjacent to the northern and northwestern boundary of the NLA are receptors of groundwater contamination. An off-site investigation was initiated in late 2000 that has identified VOC contamination in groundwater and surface water off-site, especially north of FTG-01, MOU 100, OUA. Trichloroethene (TCE) and 1,1,2,2-tetrachloroethane are the most common organic compounds present off-site. Investigatory sampling in early 2004 identified the presence of VOC contamination in groundwater off-site and northwest of OUB.

The Southeast Burial Sites (SEBS) (FTG-02, -07, -08, -09, and -10) constitute a smaller area than the NLA. Investigations since the mid-1990s also identified soil, groundwater, and surface water contamination. VOCs, principally chlorinated solvents, are the most widespread group of contaminants in the SEBS. FTG-09 is a significant source of VOC contamination (principally TCE and 1,1,2,2-tetrachloroethane) that has migrated off-site. An off-site investigation was initiated in late 2000 that has identified VOC contamination in groundwater and surface water downgradient of FTG-09. VOC contamination has also been detected in two off-site domestic wells. The off-site investigation has also identified VOC contamination in groundwater and in Joy Lake downgradient of FTG-07; however, the extent of contamination is much smaller than the area downgradient of FTG-09.

DOCUMENT NAME	PREPARED BY	DATE	DESCRIPTION
Final Site Inspection Report for the		Jun-04	Revision of the May 2004 draft-final SI
ESTP Installation Restoration	Shaw	ouii o-i	Report for FTG-14
Program Site FTG-14	Environmental		Troportion For Tr
Draft Final FTG-09 Remedial	Ziiviioiiiioiikai	Jun-04	Revision of the May 2004 draft work plan
Investigation Activity-Specific Work	Shaw	Juli 04	for FTG-09
Plan	Environmental		101110 00
Draft Final Site Inspection Report	Livioninona	May-04	Revision of the May 2004 draft SI Report
for the ESTP Installation	Shaw	Way 04	for FTG-14
Restoration program Site FTG-14	Environmental		10111014
Draft FTG-09 Remedial	Liiviioiiiioittai	May-04	Work Plan that describes proposed field
Investigation Activity-Specific Work	Shaw	iviay 04	activities and methods of investigation in
Plan	Environmental		areas off-site FTG-09 in the SEBS
Draft Site Inspection Report for the	Limioninental	May-04	SI Report that incorporates all data from
ESTP Installation Restoration		May-04	the site, including a screening level risk
Porgram Site FTG-14	Shaw		assessment: Report concludes that no
l orgiani one i 10-14	Environmental		further action is necessary for FTG-14
	Livitoriiierital		-
Comparison of Site and			Report that presents the results of a comparison of MOU 300 inorganic data to
Background Ground Water Data	Shaw	Feb-04	background values developed for Fort
for MOU-300	Environmental		Gillem.
	Shaw		Report summarizing data from the FTG-09
FTG-09 Off-Site Investigation	Environmental	Nov-03	off-site investigation.
	Environmental		on-site investigation.
Draft FTG-01 Off-Site Investigation			Work Plan that describes proposed field
ASWP (OU-A) Off-Site Monitoring		Nav. 00	Work Plan that describes proposed field
Well Installation (OU-B) Off-Site	Shaw	Nov-03	activities and methods of investigation in
Ground Water Investigation	Environmental		areas off-site from OUA and OUB in the NLA.
	Environmental		
			Revision of report that documents the site
Draft Installation Wide Background		0-4-00	wide background study for Fort Gillem that
Study Report	Chavi	Oct-03	included a geochemical evaluation of the
	Shaw		data and the statistical development of
	Environmental		background values.
Draft Preliminary Soil Gas			Report describing and summarizing the
Investigation for Areas North of the		Cam 00	results from a passive soil sampling effort
North Landfill Area and South of	Chave	Sep-03	in June 2003 to evaluate the potential for
the Southeast Burial Sites	Shaw Environmental		vapor intrusion from plumes migrating from
	Environmental		Fort Gillem to off-site areas.
			Plan providing a summary of all activities
Draft Closure Plan FTG-03	Chau	Aug-03	completed at the site, and remaining
	Shaw Environmental	-	requirements for site closure in conformance with DERP requirements.
Droft Proliminary Sail Cas	Livitoriirierital		Work Plan that describes the proposed soil
Draft Preliminary Soil Gas	Shaw	Jul-03	gas sampling in off-site areas north of the
Investigation for Areas North of the NLA and South of the SEBS	Environmental	Jui-03	NLA and south of the SEBS.
INLA AND SOUTH OF THE SEDS	LITVITOTITIETILAI	Jul-03	Plan providing a summary of all activities
Draft Closure Plan FTG-08 and		Jui-03	completed at the site, and remaining
FTG-05	Shaw		requirements for site closure in
1 10-00	Environmental		conformance to DERP requirements.
	Livitorinierital	Jul-03	Plan providing a summary of all activities
		Jui-03	completed at the site, and remaining
Draft Closure Plan FTG-06	Shaw		requirements for site closure in
	Environmental		conformance to DERP requirements.
	Limioninental		comornance to DEIXF requirements.

DOCUMENT NAME	PREPARED BY	DATE	DESCRIPTION
Draft-Final Installation-Wide		Jun-03	Report to establish through geochemical
Background Study Report, Fort			evaluation the background criteria for
Gillem, Georgia	Shaw		metals in groundwater, soils, surface water,
Ciliciti, Coorgia	Environmental		and sediment.
Progress Report Final Sitewide		Apr-03	Revision of the January 2000 historical
Data Evaluation	Shaw		data review conducted for the North Landfill
	Environmental		Area.
Draft Interim Removal Action		Mar-03	Summary report for the IRA performed at
Progress Report Debris Removal			FTG-09 in the Summer/Fall 2002
(Geophysical Anomaly A-1) FTG-	IT O		
09, SEBS	IT Corporation	F.1.00	O service and finally IDA services had
Draft Interim Remedial Action		Feb-03	Summary report for the IRA performed at
Report Drum Removal MOU200,	IT Composation		MOU 200 in the Summer/Fall 2002
North Landfill Area	IT Corporation	lan 00	List of land development rectrictions for the
Land Use Controls for MOU 600		Jan-03	List of land development restrictions for the
Land Use Controls for MOU 600	IT Corporation		MOU 600 area provided to the Master
Droft Addondure to the Course	IT Corporation	Doc 00	Planner.
Draft Addendum to the Summary		Dec-02	Summary of results for the residential well
of Off-Site Well Survey Data 1992- 2001	IT Corporation		survey performed south of Forest Parkway.
	IT Corporation	Nov-02	Cummany of regulatory requirements
Regulatory Framework for Implementing CERCLA through		1100-02	Summary of regulatory requirements applicable to Fort Gillem as implemented
the DERP at Fort Gillem	IT Corporation		through the DERP.
Technology Evaluation Field Pilot	11 Corporation	Oct-02	Report on field pilot test results of in situ
Study Report, NLA		OCI-02	treatment of TCE contamination with
Study Report, NEA	IT Corporation		potassium permanganate.
Fort Gillem Environmental	11 Corporation	Oct-03	Information sheet mailed to homes of
Restoration Program Fact Sheet		001 00	residents in neighborhoods around Ft.
No. 8	IT Corporation		Gillem
Draft Submittal - Remedial Design	Tr Corporation	Sep-02	Summary report of sampling performed to
Confirmation Activities Soil		000 02	refine extent of contamination in subject
Sampling within MOUs 200, 400			areas.
and 500 North Landfill Area	IT Corporation		
Western Stream Off-Site	,	Sep-02	Report provides a preliminary evaluation of
Screening Level Risk Assessment,			human health risk related to contaminants
Revision No. 1	IT Corporation		in the Western Stream.
Final Chemical and Geological		Jun-02	Summary report providing results from a
Investigation East of the Western			study in a previously unsampled area east
Stream	IT Corporation		of the Western Stream.
		Jun-02	Plan providing a summary of all activities
Closure Plan for the COTO			completed at the site, and remaining
Closure Plan for the ESTP			requirements for site closure in
	IT Corporation		conformance to DERP requirements.
SEBS and NLA Summary of		May-02	Status report for off-site investigation.
Findings Off-Site Investigations,			Incorporates data from installation of off-
Revision 1			site monitoring wells and refinement of
	IT Corporation		contaminant plume.
Baseline Human Health Risk		May-02	Risk assessment for the North Landfill area
Assessment and Screening Level			east of the Western Stream.
Ecological Risk Assessment for			
the East North Landfill Area	IT Corporation		
Summary of Off-site Well Survey		May-02	Compilation of sampling and survey
Data 1992-2001	IT Corporation		activities pertaining to off-site water wells.

DOCUMENT NAME	PREPARED BY	DATE	DESCRIPTION
IRA Removal of Surface		Mar-02	Presents summary of IRA for removal of
Containers Report			containers discovered after vegetation
·	IT Corporation		burning in 2000.
Community Relations Plan		Jan-02	Revision to update the September 1994
	IT Corporation		Public Involvement and Response Plan.
SEBS Phase I Summary of		Dec-01	Presents findings from investigation
Findings Report			activities conducted in 1999, and a history
			of prior investigation activity performed in
	IT Corporation		the SEBS.
SEBS and NLA Summary of		Nov-01	Status report for off-site investigation.
Findings Off-site Investigation			Presents results of soil, ground water and
	IT 0		surface water sampling, and delineation of
	IT Corporation		contaminant plume.
MOU 600 Construction Report		Nov-01	Summary report of activities for the lead-in-
	IT Oamaanatian		soil IRA excavation performed at MOU
Fort Gillem Environmental	IT Corporation	Nov. 04	600.  Information sheet mailed to homes of
Restoration Program Fact Sheet		Nov-01	residents in neighborhoods around Ft.
No. 7	IT Corporation		Gillem
Pesticide Background Levels	11 Corporation	Sep-01	Memo summarizing attempt to establish
Pesticide Background Levels		Sep-01	background levels for residual pesticides
	IT Corporation		on Fort Gillem.
MOU 800 Drum Removal Report	11 Corporation	Jul-01	Summary report of the MOU 800 drum
WOO 000 Brain Removal Report	IT Corporation	Jui-01	removal interim remedial action
Sitewide Data Evaluation, Revision	11 Corporation	Jul-01	Revision of the January 2000 historical
Chowad Bata Evaluation, Novicion		our or	data review conducted for the North Landfill
	IT Corporation		Area
Fort Gillem Environmental		May-01	Information sheet mailed to homes of
Restoration Program Fact Sheet		ĺ	residents in neighborhoods around Ft.
No. 6	IT Corporation		Gillem
Chronology of Surface Water &	-	May-01	Synopsis of significant activities and
Ground Water Sampling - NLA			findings at Fort Gillem from the early 1980s
	IT Corporation		through 1996.
Draft Site-wide Background		Apr-01	Sets criteria for levels of naturally-occurring
Screening Criteria	IT Corporation		chemicals at Ft. Gillem
Preliminary Off-site Data Report		Apr-01	Preliminary report (based on unvalidated
			data) on 2000 investigation of off-site areas
	IT Corporation		around Ft. Gillem
Joy Lake Analytical Results		Jan-01	Presents results from surface water,
	IT Oamaanatian		sediment, and fish tissue sampling of this
Droft Dublio Involvement and	IT Corporation	Dan 00	lake south of the Ft. Gillem boundary
Draft Public Involvement and		Dec-00	Plan for community relations and public involvement with residents of
Response Plan	IT Corporation		
Eastern Sewage Treatment Plant	i Corporation	Dec-00	neighborhoods around Ft. Gillem  Report on the investigation at this site.
Final Work Plan & Summary of		Dec-00	Presents conclusions and
Findings	IT Corporation		recommendations
Final Fracture Trace Analysis	11 Corporation	Sep-00	Analysis of fracture patterns in bedrock at
i mai i radiaro Trado Anarysis	IT Corporation	20p 00	Fort Gillem
Fort Gillem Environmental	co.poration	Aug-00	Information sheet mailed to homes of
Restoration Program Fact Sheet		, .ug 00	residents in neighborhoods around Ft.
No. 5	IT Corporation		Gillem

DOCUMENT NAME	PREPARED BY	DATE	DESCRIPTION
Utility Trench Investigation Report		Aug-00	Report on investigation to determine
for Building 610		1119	whether old utility trenches at this site are
	IT Corporation		potential pathways for contaminants
Treatability Testing Report for		Jul-00	Report on bench-scale tests to determine
Permanganate Treatment of			feasibility of two TCE remediation
Ground Water and Dithionite			technologies. Was the basis for the
Reduced Soil Treatment of Ground			decision to do a field pilot study with
Water			potassium permanganate at MW-48 in the
	IT Corporation		North Landfill Area
FTG-09 Geophysical Survey	·	Jun-00	Report on survey conducted at this site to
Results	IT Corporation		identify buried anomalies
Draft Sitewide Data Evaluation	-	Jan-00	Review of historical data at the North
	IT Corporation		Landfill Area
Addendum to the NLA Sampling	·	Dec-99	Recommendation to add the Southeast
Evaluation			Burial Sites area to the monitoring program
	IT Corporation		evaluation
NLA Monitoring Program		Nov-99	Evaluation of the existing monitoring
Evaluation			program with recommendations for future
	IT Corporation		monitoring in the North Landfill Area
Draft North Landfill Area, Fort	·	Jan-97	Presents remedial alternatives for the
Gillem Feasibility Study	ICF Kaiser		North Landfill Area, Fort Gillem
Expanded Site Inspection of the	Foster Wheeler	Aug-96	Presents results of investigation for five
Southeast Burial Sites, Fort Gillem	Environmental		areas near the southern portion of Fort
	Corp		Gillem: FTG-02, -07, -08, -09 and -10
Remedial Investigation of the NLA		Aug-96	Addresses nature and extent of
Fort Gillem		_	contamination, hydrogeological
			characteristics, contaminant pathways,
			assessment based on risk assessment
			techniques, compilation of historic
	Foster Wheeler		information, identification of sources of
	Environmental		contamination that justify interim removal
	Corp		actions.
Final Site Investigation Report for		Feb-96	Description of undertakings to delineate the
Fort Gillem UXO Site, Fort Gillem	Cape		burial location of a 500 kg, "Type H",
	Environmental		mustard gas-filled bomb reportedly buried
	Management, Inc.		at Fort Gillem in July 1946
Expanded Site Inspection Report		Sep-95	Presents results of an investigation in the
900 Area, Fort Gillem	Rust		900 Area of Fort Gillem; the purpose of the
	Environmental &		investigation was to identify potential
	Infrastructure		source areas in this area
Status Report on Surface Water	Foster Wheeler	Jun-95	Prepared to deal with contaminated
Drainage Control at the NLA	Environmental		leachate runoff to local streams
	Corp		
Field Investigation of Manageable		Jun-95	Summarizes the results of an invasive field
Units and Independent Locations			investigation of 13 MUs and 49
at the NLA, Fort Gillem	B&V Waste		independent locations in Study Areas 4, 5,
	Science, Inc.		7, and 8 within the NLA
Well Survey Report at Fort Gillem	Ebasco	Apr-94	Presents results of the well survey which
	Environmental		was conducted near Fort Gillem
Wastewater Management Study	U.S. Army	Jun-93	Summarizes an investigation to collect data
No.32-24-H1W7-93, U.S. Army	Environmental		for a health risk assessment for
Fort Gillem	Hygiene Agency		recreational users of the streams leaving
1	(USAEHA)		Fort Gillem

DOCUMENT NAME	PREPARED BY	DATE	DESCRIPTION
Final Report of Findings for		Jun-93	Description of the results of a geophysical
Geophysical Survey, NLA, Fort	Black and Veatch		survey conducted in the NLA to determine
Gillem	Waste Science		the potential for the presence of surface
	and Technology		and subsurface contamination.
	Corp.		
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Analysis, Vol. II of II	ADL	Ne. 00	Fort Gillem
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Overall Installation Environmental Impact Statement	Ocean Data Corp.	Aug-80	
Installation Assessment of Fort Gillem, Report No. 167	USATHMA	Mar-80	First attempt to define the manner in which hazardous chemicals were handled at Fort Gillem
Subsurface Investigation, Fort Gillem (Atlanta Army Depot)	Law Engineering Testing Company	Jan-79	Assessment of the subsurface conditions in the North Landfill Area on Fort Gillem
Water Quality Engineering Special Study No. 32-62-0117-79 Fort Gillem, GA	USAEHA	Jun-05	
Environmental Impact Assessment	Ralph Liss	Feb-76	
Fort Gillem Preliminary Surface Water/Sediment Sampling and Analysis Volume I of II			
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Fort Gillem Hydrogeologic Study Chemical Analysis Draft Report			
Chemical Waste Burial Historical Survey			

# FTG-01 - NORTH LANDFILL AREA MAJOR OPERABLE UNITS (MOUS) 100-800

### SITE DESCRIPTION

The North Landfill Area (NLA), comprising ~300 acres of the northern-most portion of Fort Gillem, was the principal location for disposal of surplus equipment and waste industrial material (including used solvents, POLs and excess materials) generated at Fort Gillem. Investigative reports, interviews and aerial photographs indicate that portions of the NLA were used for burning and other indiscriminate waste burial and disposal from 1941-1980.

On record is one instance of buried, solid waste exposed by rainfall and washed into nearby surface waters. An Erosion and Sediment Control project has been completed to prevent potential reoccurrence.

Environmental investigations and monitoring beginning in 1980 showed that ground water and surface water had been impacted by material buried in the NLA. A comprehensive well survey conducted in 1992, in the neighborhood surrounding Fort Gillem identified 23 private wells and one spring in use as drinking water sources and six wells used for other purposes. The U.S. Army provided bottled water to residents when contaminants (primarily TCE) were discovered in some of the wells. The source of contaminants

affecting off-site wells has not been determined; however, the Army has funded hookups to the local public water supply for residents without such connections.

**STATUS** 

RRSE RATING: High CONTAMINANTS:

VOCs, Metals, PAHs, Pesticides

**MEDIA OF CONCERN:** 

Soil, Groundwater, Surface Water, Sediments

All contaminated media have been grouped into eight major operable units (MOUs). The eight MOUs are: 100, 200, 300, 400, 500, 600, 700, and 800. Remedial activities will be conducted at appropriate MOUs and described separately in the following pages.

Several previous investigations have reported disposal of various types of waste and surplus material in the landfill, including: food products; sludge from the industrial waste and sewage treatment plants; DDT drums; rubber products; pharmaceutical/surgical supplies and materials; POL materials; XXCC-3 (used to treat clothing for resistance to chemical agents); and gas mask parts. This information is partially derived from disposal records generated from 1960 through the middle 1970s and partially from interviews with installation workers.

A surface geophysical survey of the NLA was conducted in 1993 to identify debris burial areas. The NLA was subdivided into eight study areas (based on topographical features to aid in the presentation and discussion of the survey results). The survey identified 356 burial locations, 281 of which were grouped into 41 Manageable Units (MUs) based on geophysical and geographical similarities. The remaining 75 locations were considered scattered Independent Locations (ILs).

The RI addressed all 8 study areas in three phases. The investigations included an active and passive soil vapor survey; construction and sampling of exploratory trenches, borings and monitoring wells; geophysical surveying; water level measurements; and the collection and analysis of groundwater, surface water, sediment and surface soil samples.

A feasibility study to evaluate remedial alternatives for the NLA was completed in 1997. Actions after 1997 are being implemented under a TERC. Site activities have included fracture trace analysis, bedrock investigations, groundwater pumping tests and extent delineations of the areas identified in the FS that required remediation, field scale pilot test for oxidation of solvents, IRA excavation at MOU 200 and 600 and off-post investigations. A database was developed for all historical sampling data and a site wide data evaluation was completed.

An offsite investigation that includes the collection of ground water, surface water and sediment, and soil samples was implemented in May 2001 in an effort to determine the nature and extent of contamination migrating from Fort Gillem. This work is ongoing and focuses on areas north of the NLA near the Western Stream. Samples collected from these areas were analyzed for VOCs, SVOCs, pesticides/PCBs, and metals. An off-site soil vapor screening was implemented in 2003. The ground water data collected from north of the installation was analyzed using both a mobile laboratory and a fixed-base laboratory to determine the extent of the VOC plumes originating from Fort Gillem.

VOCs, SVOCs, metals and pesticides have been detected in samples collected from north of the NLA MOU 100 OU(A), however, VOCs (specifically TCE and 1,1,2,2-tetrachloroethane) are the most consistent and widespread. Current ground water monitoring data indicated that TCE and 1,1,2,2 tetrachloroethane plumes exist offsite north of the NLA. TCE and 1,1,2,2-tetrachloroethane were detected in ground water and surface water during sampling conducted offsite in FY01-02. 1,1,2,2 tetrachloroethane concentrations were found to slightly exceed the GAEPD HSRATCs and GA In-Stream Standards.

# FTG-01 - NORTH LANDFILL AREA MAJOR OPERABLE UNIT 100 (PAGE 1 OF 2)

### SITE DESCRIPTION

MOU 100 is defined as groundwater (on and off post) contaminated with VOCs. The MOU was defined in the 1997 draft Feasibility Study for the North Landfill Area (NLA) using data from the NLA Remedial Investigation. MOU 100 has been divided into sub-units (OUA, OUB, OUH, and OUI, and off-site) to simplify additional sampling and remediation. A site wide data evaluation, completed in 2001, summarized contaminant distribution and trends through time. This data evaluation has facilitated a focused approach for the performance of remedial design confirmation sampling activities.

A bench scale study and pilot test of potassium permanganate were completed in 2000. The pilot test targeted an area adjacent to monitoring wells with high concentrations of TCE. The success of the pilot test is the basis for selecting potassium permanganate as the likely remedy for TCE in groundwater. Just south of the installation boundary in the central portion of the NLA, 1,1,2,2-tetrachloroethane occurs in groundwater at concentrations that exceed regulatory limits. The

#### **STATUS**

RRSE RATING: High CONTAMINANTS:

**VOCs** 

**MEDIA OF CONCERN:** 

Groundwater, Surface Water

**COMPLETED IRP PHASE:** 

PA/SI, Phase I RI/FS, IRA

**CURRENT IRP PHASE:** RI/FS, IRA

**FUTURE IRP PHASE:** 

RI/FS, IRA, RD, RA, RA(O)

area where groundwater is contaminated with 1,1,2,2-tetrachloroethane will require a remedy other than permanganate because this compound does not react well with permanganate.

An investigation of the off-site area adjacent to OUA (central portion of the NLA) was initiated in late 2000 and has included the collection of groundwater, soil, surface water, and sediment samples. Groundwater samples have been collected using DPT and through monitoring wells installed in both the overburden and bedrock. Off-site groundwater and surface water contain both TCE and 1,1,2,2-tetrachloroethane that exceeds regulatory limits in some areas. The extent of contamination in the overburden groundwater and surface water is defined. One bedrock monitoring well was installed in February 2004 that confirmed the presence of contamination in this subsurface interval. Passive soil vapor samples were collected in June 2003 to evaluate the potential for vapor intrusion.

An investigation of the off-site area adjacent to OUB (northwest corner of the NLA) was initiated in early 2004 and has included the collection of groundwater and surface water samples. Groundwater samples have been collected using DPT and through monitoring wells installed in both the overburden. Off-site groundwater and surface water contain TCE that exceeds regulatory limits in some areas.

A baseline risk assessment has been completed for the eastern third of the NLA. The assessment showed that soil and groundwater pose a potential risk is specific and isolated areas.

All groundwater and surface water for the NLA is funded under MOU 100.

### PROPOSED PLAN

Develop a decision rule for identifying primary sources relative to use of MNA as groundwater remedy.

**OUA** – Source treatment, such as potassium permanganate injections will be used to treat TCE, treatment of 1,1,2,2-tetrachloroethane (such as thermal and/or SVE). Assume that on-site source treatment actions will reduce off-site contamination to acceptable concentrations. Delineate the lateral downgradient extent of contaminants in bedrock in the off-site area. Complete the baseline risk assessment. Evaluate monitored natural attenuation (MNA).

# FTG-01 - NORTH LANDFILL AREA MAJOR OPERABLE UNIT 100 (PAGE 2)

### PROPOSED PLAN

**OUB** - Delineate the lateral downgradient extent of contaminants in bedrock in the off-site area. Source treatment, such as potassium permanganate injections will be used to treat TCE. Assume that on-site source treatment actions will reduce off-site contamination to acceptable concentrations. Complete the baseline risk assessment. Evaluate MNA.

**OUH** – Treat source areas as necessary, and evaluate MNA.

**OUI** – Identify source areas and evaluate MNA. Define off-site extent of contamination.

The groundwater monitoring network will be evaluated and monitored as needed. The off-site well survey will be updated as needed.

### SITE DESCRIPTION

MOU 200 is defined as subsurface soil contaminated with VOCs. The MOU was defined in the 1997 draft Feasibility Study for the North Landfill Area (NLA) using data from the NLA Remedial Investigation. It consists of burial areas totaling approximately 4 acres.

An Interim Remedial Action (IRA) was completed in 2001 that included the removal of 100 55-gallons and approximately 4,000 tons of soil contaminated with VOCs. Geophysical surveying and soil sampling were completed in 2002 to refine the delineation of source areas.

### PROPOSED PLAN

Refine and complete the definition of source areas. Implement source control remedy such as permanganate injection in OUA source areas (vicinity of monitoring wells MW-57 and MW-58) and excavation of OUB source areas ~ 1000 cy (vicinity of Trench 12).

### **STATUS**

RRSE RATING: High CONTAMINANTS: VOCs, Metals, PAHs MEDIA OF CONCERN:

Soil

COMPLETED IRP PHASE:
PA/SI, Phase I RI/FS, IRA
CURRENT IRP PHASE:
None

**FUTURE IRP PHASE:** 

RI/FS, IRA

### SITE DESCRIPTION

MOU 300 is defined as groundwater contaminated with metals. The MOU was defined in the 1997 draft Feasibility Study for the North Landfill Area and included data from 13 monitoring wells. A groundwater sampling event in 2000 used the low-flow sampling technique to minimize turbidity and generate high quality samples. Metals detected in samples from the 2000 sampling event did not exceed regulatory standards and showed no significant impact on groundwater. MOU 300 data were compared to the draft site wide background values developed for Fort Gillem and the detected metals were found to be naturally occurring.

### PROPOSED PLAN

No additional action will be proposed for MOU 300.

### **STATUS**

RRSE RATING: High CONTAMINANTS:

Metals

**MEDIA OF CONCERN:** 

Groundwater

**COMPLETED IRP PHASE:** 

PA/SI. RI/FS

**CURRENT IRP PHASE:** 

**RC** 

**FUTURE IRP PHASE:** 

RC

# FTG-01 - NORTH LANDFILL AREA MAJOR OPERABLE UNIT 400

### SITE DESCRIPTION

MOU 400 is defined as subsurface soil contaminated with metals and includes nine former burial areas comprising approximately three acres. The MOU was defined in the 1997 draft Feasibility Study for the North Landfill Area (NLA) using data from the NLA Remedial Investigation.

### PROPOSED PLAN

MOU 400 data will be compared to the draft site wide background values developed for Fort Gillem to evaluate whether the detected metals are naturally occurring.

#### STATUS

RRSE RATING: High CONTAMINANTS:

Metals

**MEDIA OF CONCERN:** 

Soil

**COMPLETED IRP PHASE:** 

PA/SI, RI/FS

**CURRENT IRP PHASE:** 

RC

**FUTURE IRP PHASE:** 

RC

### SITE DESCRIPTION

MOU 500 is defined as subsurface soil contaminated with semivolatile organic compounds, primarily benzo(a)pyrene. The MOU was defined in the 1997 draft Feasibility Study for the North Landfill Area (NLA) using data from the NLA Remedial Investigation

### PROPOSED PLAN

MOU 500 data will be included in the baseline risk assessment for the central portion of the NLA.

### **STATUS**

RRSE RATING: High CONTAMINANTS:

VOCs, PAHs

**MEDIA OF CONCERN:** 

Soil

**COMPLETED IRP PHASE:** 

PA/SI, RI/FS

**CURRENT IRP PHASE:** 

**RC** 

**FUTURE IRP PHASE:** 

RC

### SITE DESCRIPTION

MOU 600 is defined as surface soil contaminated with lead. The MOU was defined in the 1997 draft Feasibility Study for the North Landfill Area (NLA) using data from the NLA Remedial Investigation. MOU 600 consists of five burial areas encompassing approximately 5 acres, including a burn pit and former firing range.

A soil removal was completed in FY01 that resulted in the excavation and disposal of approximately 28,000 tons of soil.

Land Use Controls will be used to limit land use of this area.

### STATUS

RRSE RATING: High CONTAMINANTS:

Metals

**MEDIA OF CONCERN:** 

Soil

**COMPLETED IRP PHASE:** 

PA/SI. Phase I RI/FS. IRA

**CURRENT IRP PHASE:** 

None

**FUTURE IRP PHASE:** 

RI/FS, IRA

### PROPOSED PLAN

Additional soil removals will be completed consistent with future land use requirements. The volume of material to be excavated at the burn pit is estimated to be approximately 2,000 cubic yards. The volume of material to be excavated at the firing range is estimated to be approximately 2,000 cubic yards.

### SITE DESCRIPTION

MOU 700 is defined as metals and volatile organic compounds in surface water. The MOU was defined in the 1997 draft Feasibility Study for the North Landfill Area (NLA) using data from the NLA Remedial Investigation.

On-site monitoring is funded under MOU 100. Any issues related to off-site surface water will also be funded under MOU 100.

### PROPOSED PLAN

No further action is needed.

### **STATUS**

RRSE RATING: High CONTAMINANTS:

VOCs, Metals

**MEDIA OF CONCERN:** 

Surface Water, Sediment

**COMPLETED IRP PHASE:** 

PA/SI, RI/FS, LTM

**CURRENT IRP PHASE:** 

RC

**FUTURE IRP PHASE:** 

RC

# FTG-01 - NORTH LANDFILL AREA MAJOR OPERABLE UNIT 800

### SITE DESCRIPTION

MOU 800 is defined as partially buried drums and containers. The MOU was defined in the 1997 draft Feasibility Study for the North Landfill Area (NLA) using data from an inventory completed during the NLA Remedial Investigation.

The drums and containers were removed from the NLA and disposed of during FY99 and FY01.

### PROPOSED PLAN

No further action is needed.

### STATUS

RRSE RATING: High CONTAMINANTS:

VOCs, Metals, PAHs, Pesicides

**MEDIA OF CONCERN:** 

Groundwater, Surface Water, Sedi-

ment

**COMPLETED IRP PHASE:** 

PA/SI, RI/FS, IRA

**CURRENT IRP PHASE:** 

RC

**FUTURE IRP PHASE:** 

RC

### FTG-02 SE AREA DUMP SITE

### SITE DESCRIPTION

This site, adjacent to a tract acquired by the Georgia Air National Guard, is located in the southeastern corner of Fort Gillem. The site covers ~2 acres and was used as a dump site for rubber products and miscellaneous debris during the approximate time frame of 1949-1960.

An Expanded Site Inspection (ESI) was performed in 1995. The ESI involved a geophysical survey, soil vapor survey, soil borings, temporary monitor well installation, exploration trenching, permanent monitor well installation, and surface water and sediment sampling.

The exploration trenches in this area revealed debris to a depth of 5 feet, including broken glass and plates/china, glass bottles, 55-gallon drums, carbon canisters, and miscellaneous construction debris. Similar debris was encountered at a depth of about 5 feet in nearby soil borings.

### **STATUS**

RRSE RATING: High CONTAMINANTS:

Metals, VOCs

**MEDIA OF CONCERN:** 

Soil, Groundwater, Sediment **COMPLETED IRP PHASE**:

PA/SI

**CURRENT IRP PHASE:** 

RI/FS

**FUTURE IRP PHASE:** 

RC

Priority pollutant metal contamination (antimony, lead, silver and zinc) above the Georgia Department of Natural Resources, Environmental Protection Division (GA EPD) notification concentrations (NC) were detected in samples collected from trenches and borings.

The RI field work was completed in early 2000. The BLRA Work Plan was completed in FY01. During the fall 2000 sampling, no contaminants were detected above regulatory limits in wells on the down gradient side of FTG-02.

### **PROPOSED PLAN**

A Site Inspection (SI) Report will be prepared for the SE Area Dump Site that includes all data from the site. The Army will submit the report to the GA EPD and request no further action and site close-out. Groundwater monitoring for the SEBS will be funded under FTG-09.

# FTG-03 - 900 AREA INDUSTRIAL WASTEWATER TREATMENT PLANT (IWTP)

### SITE DESCRIPTION

The Industrial Wastewater Treatment Plant (IWTP) was located in the northwestern corner of Fort Gillem. The IWTP was constructed in the mid to late 1940s, renovated in 1969, and then operated from 1972 to 1978. The abandoned IWTP structures were demolished in early 2004.

The 900 Area is composed of AEDB-R sites FTG 03 - 06.

Waste waters treated at the IWTP were generated in both the 900 and 400 Areas at Fort Gillem. Wastes treated at the IWTP included oils and greases, paint chips, phosphates, phenols, chromates, solvents, suspended matter, alkaline cleaning solutions, stripping compounds and soil and rinse water. Operations in the 900 Area generated approximately 72,000 gallons per day of waste, which was collected and gravity fed via an industrial waste water sewer system to the IWTP. After 1971, waste waters from the 400 Area were collected by an industrial sewer system, lifted at a pumping station and delivered by force main to the treatment plant. Prior to 1971,

### **STATUS**

RRSE RATING: High CONTAMINANTS:

**VOCs** 

**MEDIA OF CONCERN:** 

Soil, Groundwater, Surface Water

**COMPLETED IRP PHASE:** 

PA/SI. RI

**CURRENT IRP PHASE:** 

RC

**FUTURE IRP PHASE:** 

**RC** 

wastes generated at the 400 Area were delivered to the IWTP via storm sewer system or shipped via truck.

Functionally, the IWTP consisted of an equalization basin, recirculation facility (buildings 934 and 934A), clarifier, phenol oxidation chamber, effluent holding pond, and associated subsurface drains and sewers. Waste water from the operations control room and lavatory were discharged to a septic tank and drain field. Caustic, acid and alum above ground storage tanks, each with a capacity of 8,000 to 10,000 gallons, are still in place within concrete containment structures. The area also contained a series of sludge drying beds which were removed in 1991. An under-drain beneath the beds discharged directly to surface water. Sludges generated at the IWTP were placed in the beds, allowed to dry and disposed on-site at the North Landfill Area of Fort Gillem.

After treatment, waste water was discharged to a 43,000-gallon, earthen holding pond which in turn discharged to a nearby tributary of Conley Creek. Biological studies conducted in 1972 on the tributary indicated suppression of biological diversity in the tributary for a distance up to 2 miles down stream. The facility never operated under a National Pollutant Discharge Elimination System (NPDES) permit. When the IWTP could not meet the effluent standards established by the permitting authority of the GA EPD, it was placed on standby and has been inactive since that time.

Five well pairs were installed in 1996 near the western and southwestern portion of the installation. The location of each cluster was chosen in order to determine if substances are migrating on post from an outside source. Recent sample results indicated PCE in the ground water above MCL at one location. The direction of the ground water flow in this area suggest that off-post sources of contamination are possible.

### PROPOSED PLAN

A Site Inspection (SI) Report will be prepared for the IWTP Site that includes all data from the site. The Army will submit the report to the GA EPD and request no further action and site close-out.

# FTG-04 - 900 AREA SOLVENT DISPOSAL PIT (SDP)/ FORMER 900 BUILDING

### SITE DESCRIPTION

The SDP and the former 900 Building are combined to form site FTG-04. The SDP has been identified as a source of chlorinated solvents and other synthetic organic compounds which had been released into the soil and ground water as a result of past operations.

Approximately 1,000 cy of petroleum hydrocarbon- and solvent-contaminated soil have been excavated from the SDP and bioremediated using indigenous microorganisms in an air-supplied soil pile treatment system. The excavation site was back-filled with the treated soil.

The 900 Building, now removed, was the largest building in the 900 area industrial complex. The building served as depot maintenance of aircraft. Wastes from the activities in the 900 depot building may have also been discharged into the SDP.

An Expanded Site Inspection (ESI) was performed in this area in

1995. It concluded that the 900 Building floor drain system and the SDP were sources of contamination to the shallow aquifer.

In March 1996, The Directorate of Public Works (DPW) Environmental Division performed an invasive investigation at the former location of the 900 Building. The exploratory investigation was implemented in order to initially characterize contamination associated with the piping and soil to alleviate any delays that may occur during the planned construction activities in this area. Most of the geophysical anomalies that were identified in the ESI report were found to be associated with either large boulders, concrete and rebar or loose sections of ductile steel pipe. DPW removed the piping that was identified during November 1996.

TCE, above MCLs, has been detected in groundwater at the installation boundary. The solvent was detected below action levels in off-post stream samples.

A Risk Assessment Work Plan has been prepared for FTG-04.

### PROPOSED PLAN

The Remedial Investigation/Feasibility Study (RI/FS) will be completed and a report will be prepared. Additional sampling will be required to insure full delineation of the extent of contamination. A baseline risk assessment will be completed. The FS will include an evaluation of monitored natural attenuation as a final remedy for the site. Sampling of the monitoring wells around the site will continue.

### **STATUS**

RRSE RATING: High CONTAMINANTS:

TCE

**MEDIA OF CONCERN:** 

Groundwater

**COMPLETED IRP PHASE:** 

PA/SI. IRA

**CURRENT IRP PHASE:** 

RI/FS

**FUTURE IRP PHASE:** 

RI/FS, LTM

### FTG-05 900 AREA HEATING PLANT

### SITE DESCRIPTION

The Heating Plant is located north of the SDP area and has been demolished. The coal burning plant was housed in Building 925. Prominent features in this area included a coal stockpile area, a 42,000-gallon fuel oil UST, septic tank and a lift station. The UST was removed. The lift station was used to transfer waste water from the 400 area to the IWTP. The Heating Plant was abandoned in 1975.

No contamination attributable to this site was found during the ESI sampling.

### PROPOSED PLAN

A Site Inspection (SI) Report will be prepared for the Heating Plant that includes all data from the site. The Army will submit the report to the GA EPD and request no further action and site close-out.

### **STATUS**

RRSE RATING: High CONTAMINANTS:

POL, VOCs

**MEDIA OF CONCERN:** 

Soil, Groundwater

**COMPLETED IRP PHASE:** 

PA/SI, RI, IRA

**CURRENT IRP PHASE:** 

RC

**FUTURE IRP PHASE:** 

RC

### FTG-06 900 AREA VEHICLE WASH RACK

### SITE DESCRIPTION

The Vehicle Wash Rack (VWR) is located adjacent to both the Solvent Disposal Pit to the east and the Industrial Waste Water Treatment Plant to the north. The VWR is a concrete trough structure which was used for cleaning and servicing vehicles. Wash water from the trough was drained through the bottom and discharged to the IWTP.

The former operations at this site were conducive to potential solvent contamination. Solvents such as PCE and TCE have been detected in down gradient wells.

No contamination attributable to this site was found during the ESI sampling.

### PROPOSED PLAN

A Site Inspection (SI) Report will be prepared for the Vehicle Wash Rack that includes all data from the site. The Army will submit the report to the GA EPD and request no further action and site close-out.

#### **STATUS**

RRSE RATING: High CONTAMINANTS:

POL. Solvents

**MEDIA OF CONCERN:** 

Soil, Groundwater

**COMPLETED IRP PHASE:** 

PA/SI, RI

**CURRENT IRP PHASE:** 

RC

**FUTURE IRP PHASE:** 

RC

### FTG-07 BURIAL SITE NO. 1 (WEST OF BLDG. 307)

### SITE DESCRIPTION

FTG-07 is located west of Buildings 307 and 308 near the southern border of the installation in the central portion of the Southeast Burial Sites (SEBS). Rubber products and unspecified medical supplies were reportedly buried in this area around 1972. A stream flows southward through FTG-07 and discharges into Joy Lake.

An Expanded Site Investigation (ESI) was completed for FTG-07 in 1995. The ESI included a geophysical survey, a soil vapor survey, trench excavation, completion of soil borings and collection of soil samples, installation of temporary and permanent monitoring wells and collection of groundwater samples, surface water sampling, and sediment sampling.

Remedial Investigation (RI) activities in 1999 and 2000 included monitoring well installation and ground water sampling and fish sampling in Stephens Lake. The off-site Investigation for the SEBS started in late

### **STATUS**

RRSE RATING: High CONTAMINANTS:

**VOCs** 

**MEDIA OF CONCERN:** 

Groundwater

**COMPLETED IRP PHASE:** 

PA/SI

**CURRENT IRP PHASE:** 

RΙ

**FUTURE IRP PHASE:** 

FS, RAO

2000 and has included surface water, sediment, and fish sampling from Joy Lake; monitoring well installation, and ground water sampling. Semiannual monitoring of ground water and surface water has been on-going since 1995. Activities to complete the RI in early 2004 included installation of an overburden – bedrock monitoring well pair at the northern end of FTG-07 and collection of surface soil and surface water samples.

Ground water data from FTG-07 show a broad area in which the volatile organic compounds (VOCs) trichloroethene (TCE) and 1,1,2,2-tetrachloroethane occur at concentrations exceeding the U. S. Environmental Protection Agency Maximum Contaminant Limits (MCLs). Soil data from FTG-07 do not identify sources of the organic compounds that occur in ground water. Surface water data from FTG-07 have detections of TCE and 1,1,2,2-tetrachloroethane, suggesting ground water discharge to surface water.

The baseline risk assessment and RI Report are scheduled to be completed by the end of 2004.

### PROPOSED PLAN

Complete a focused Feasibility Study. On the basis of existing site data, monitored natural attenuation is currently considered to be the likely final remedy. Additional groundwater monitoring for FTG-07 will be funded under FTG-09.

### FTG-08 BURIAL SITE NO. 2 (SOUTH ST. & BOUNDARY RD.)

### SITE DESCRIPTION

FTG-08 is located along the southern boundary of Fort Gillem, west of the intersection of South Street and Boundary Road in the central portion of the Southeast Burial Sites (SEBS). Pharmaceutical wastes, medical supplies, and food products were reportedly buried in this area between 1964 and 1972. Surface water samples, collected in 1980 from the stream on the east side of FTG-08, contained trichloroethene (TCE), 1,2-dichloroethene, and chloromethane. These detections suggested that materials buried at FTG-08 may have been a source of contamination.

An Expanded Site Investigation (ESI) was completed for FTG-08 in 1995. The ESI included a geophysical survey, a soil vapor survey, trench excavation, completion of soil borings and collection of soil samples, installation of temporary and permanent monitoring wells and collection of groundwater samples, surface water sampling, and sediment sampling.

### **STATUS**

RRSE RATING: Medium

**CONTAMINANTS:** 

**VOCs** 

**MEDIA OF CONCERN:** 

Groundwater

**COMPLETED IRP PHASE:** 

PA

**CURRENT IRP PHASE:** 

SI

**FUTURE IRP PHASE:** 

RC

No buried wastes were present in the four trenches excavated during the ESI. No constituents detected in ESI soil samples exceeded U. S. Environmental Protection Agency (EPA) Region IX preliminary remediation goals (PRGs). Only TCE in one monitoring well exceeded the EPA maximum contaminant limit (MCL). No constituents in either surface water or sediment samples exceeded regulatory standards. The overall conclusion is that FTG-08 is not a source of contamination. The TCE in groundwater appears to be from upgradient sources, based on sampling across the SEBS.

### PROPOSED PLAN

A Site Inspection (SI) Report will be prepared for FTG-08 that includes all data from the site. The Army will submit the report to the GA EPD and request no further action and site close-out.

# FTG-09 BURIAL SITE NO. 3 (1/4 MI W OF SOUTH ST AND BOUNDARY RD)

### SITE DESCRIPTION

FTG-09 is located adjacent to the southern boundary of the installation, approximately ¼ of a mile west of the intersection of South Street and Boundary Road in the western portion of the Southeast Burial Sites (SEBS). FTG-09 is located upstream of a tributary of Upton Creek. The site was used for waste disposal from 1948 to 1964. Materials known to have been buried at FTG-09 include rubber products (tires, hoses, gaskets, aircraft wing boots) and food products.

An Expanded Site Investigation (ESI) was completed for FTG-09 in 1995. The ESI included a geophysical survey, a soil vapor survey, trench excavation, completion of soil borings and collection of soil samples, installation of temporary and permanent monitoring wells and collection of groundwater samples, surface water sampling, and sediment sampling. One of the trenches excavated during the ESI contained several drums of an unidentified white crystalline material. Substantial concentrations of chlorinated VOCs were present in soil and

**STATUS** 

RRSE RATING: High CONTAMINANTS:

Metals, VOCs

**MEDIA OF CONCERN:** 

Surface Water, Soil, Groundwater

**COMPLETED IRP PHASE:** 

PA/SI

**CURRENT IRP PHASE:** 

RI/FS. RD

**FUTURE IRP PHASE:** 

RD, RA, RA(O)

groundwater samples from an area approximately 50 feet north of the post boundary.

Remedial investigation (RI) activities were completed in 1999 and included the installation of additional monitoring wells. Chlorinated VOCs, principally TCE and 1,1,2,2-tetrachloroethane, were detected in these wells. An off-site investigation was initiated in 2000 that is on-going. The off-site investigation has defined a large plume that originates at FTG-09 and has migrated to the southeast. The plume also occurs in two domestic wells in the neighborhood south of the installation. The plume has also discharged to the unnamed stream south of the installation.

Additional soil and groundwater sampling at FTG-09 provided additional definition of the source area. A focused geophysical survey at FTG-09 in 2001 identified an area adjacent to and northeast of the plume, suggestive of buried drums. An excavation of this area in August 2002 uncovered 50 canister filters and three jars of a white chalky substance.

Bench scale tests of several technologies, including Fenton's reagent, persulfate, and permanganate, were also completed in 2001 using soil and groundwater samples from FTG-09. The testing showed that the 1,1,2,2-tetrachloroethane could not be effectively remediated with these technologies. Passive soil vapor samples were collected in June 2003 to evaluate the potential for vapor intrusion. In early 2004, two monitoring wells were installed off-site in the bedrock. Samples from both of the wells included detections of both TCE and 1,1,2,2-tetrachloroethane.

Activities to complete the RI will be completed in 2004, including the installation of additional off-site monitoring wells, the collection of surface water samples, and a off-site soil gas survey over approximately 34 acres just downgradient from FTG-09. Selected monitoring wells will be sampled for natural attenuation parameters to evaluate MNA as part of the FS. The RI/FS Report is planned for submittal in the spring of 2005.

### PROPOSED PLAN

After completion and approval of the FS, complete remedial design and implement an on-post remedial action. Thermal treatment is a likely technology. The overall goal is to combine on-site source control followed by MNA. Monitoring will continue.

### FTG-10 BURIAL SITE NO. 4 (W OF BLDG 309 & 310)

### SITE DESCRIPTION

FTG-10 is located in the northern portion of the Southeast Burial Sites (SEBS), west of Buildings 309 and DRMO (310). The site was used for waste disposal during the approximate period of 1948 to 1964. A storm water outfall originates at FTG-10 and discharges into Stephens Lake. Surface water at the point of entry to Stephens Lake was sampled in 1982 and no contamination was found.

An Expanded Site Investigation (ESI) was completed for FTG-09 in 1995. The ESI included a geophysical survey, a soil vapor survey, trench excavation, completion of soil borings and collection of soil samples, installation of temporary and permanent monitoring wells and collection of groundwater samples, surface water sampling, and sediment sampling. The three trenches excavated for the ESI contained debris, including metal, wood, glass, ceramic, and tire fragments; rusted drums; paint cans; bottles; and ash. Both soil and groundwater samples contained VOCs, primarily chlorinated VOCs; however, the investigation did not identify a plume or widespread area of contamination.

### **STATUS**

RRSE RATING: High CONTAMINANTS:

**VOCs** 

**MEDIA OF CONCERN:** 

Groundwater

**COMPLETED IRP PHASE:** 

PA/SI

**CURRENT IRP PHASE:** 

RΙ

**FUTURE IRP PHASE:** 

FS, RC

RI activities were completed at the site in 1999 and 2000 and included the installation of additional monitoring wells. VOCs were detected in samples from the monitoring wells. FTG-10 is upgradient from Stephens Lake, which is stocked with fish for recreational purposes. Fish were taken from the lake and evaluated in 2001. The study indicated that the fish are safe for human consumption.

FTG-10 is also upgradient from FTG-07 and, therefore, any contamination migrating from the site will be handled under FTG-07. Data from FTG-10 will be incorporated into the FTG-07 RI Report, which will be completed by the end of 2004.

### PROPOSED PLAN

Complete a focused Feasibility Study consistent with the proposed plan for FTG-07. On the basis of existing site data, monitored natural attenuation is currently considered to be the likely final remedy. Additional groundwater monitoring for FTG-10 will be funded under FTG-09.

### FTG-11 UNEXPLODED ORDNANCE SITE

### SITE DESCRIPTION

On 30 June 1946, a leaking 500 kg, sulfur (H-Type) mustard agent-filled bomb was detected on a freight car located at the Georgia Railroad Freight Yard Delta Crossing, Dekalb and Delta Avenues, Atlanta, Georgia. The leaking bomb was removed from the freight car by the U.S. Army Technical Escort Unit Personnel and transported to the Atlanta Ordnance Depot (now Fort Gillem). The bomb was buried by Technical Escort Unit personnel on 2 July 1946 in an excavation 3 meters deep. It is probable that decontaminant was added.

A SI was performed at the UXO site during 1995. The site investigation involved geophysical investigations, investigation of ground water monitoring wells, and soil and ground water sampling to confirm or refute the presence of the sulfur (H-Type) mustard agent-filled bomb. Additionally, the SI was intended to characterize the vertical and horizontal extent of environmental impact caused by the burial action.

An area in the central portion of the open, grassy area at the UXO site

# has been identified as the suspected burial location of the sulfur (H-Type) mustard agent-filled bomb. The primary identification process consisted of interpretation of the geophysical findings, which indicated an isolated area of disturbed soil profile with a metallic object buried within this area. This geophysical finding is also supported by U.S Army reports and historical information relevant to the location of the reported bomb disposal. Consequently, all intrusive investigation activities, which included installation of soil borings and soil sampling, and monitoring well installation and ground water sampling, were conducted in a focused area surrounding this suspected bomb disposal area.

Also identified as a result of the geophysical investigation were several areas, located in the southern portion of the open, grassy area of the UXO site, which have linear outlines. The presence of a significant quantity of widely distributed metallic objects within these areas is likely due to indiscriminate burial of debris associated with the adjacent vehicle storage/maintenance facility.

The analytical results of the soil and ground water samples collected during the SI reveal little evidence or concern of contamination in the suspected bomb disposal area. As such, it has been concluded that the environmental media in the area surrounding the suspected bomb disposal site has not been adversely impacted by this reported burial action.

### PROPOSED PLAN

No further action is planned at this site.

### **STATUS**

RRSE RATING: Low CONTAMINANTS:

Thiodiglycol

**MEDIA OF CONCERN:** 

Soil, Groundwater

**COMPLETED IRP PHASE:** 

PA/SI

**CURRENT IRP PHASE:** 

RC

**FUTURE IRP PHASE:** 

RC

### FTG-12 UNDERGROUND STORAGE TANK (UST) SITES

### SITE DESCRIPTION

This site is not in AEDB-R.

Fort Gillem has almost completed its UST management program to meet the requirements of the December 22, 1998 Federal New UST Performance Standards. The removal of nine abandoned USTs was completed in January 1996. The remaining active heating oil USTs are exempt under Federal regulations and are not required to meet the 1998 UST standards. However, the U.S. Army AR-200-1 environmental regulation require all UST sites to follow the more stringent Federal regulations. Fort McPherson's Environmental Division and Directorate of Public Works is currently evaluating the future heating requirements at Fort Gillem for the remaining buildings which utilize the heating oil system. These buildings include Building 304, 305, 309 and 610.

Two additional sites (Building 101 and 931) which have diesel UST for emergency power generation and an AAFES Diesel Fuel Station

(Building 610) will require upgrades to either the tank or the fuel piping. A SOW to perform tank tightness testing and evaluate existing UST systems for compliance with the 1998 UST standards was developed.

To date, only two former UST sites (Buildings 312 and 610) have contamination detected in the subsurface soils and ground water. The sites are currently being sampled on a quarterly basis to monitor the petroleum contaminant concentrations and migration of the plume.

### **STATUS**

**RRSE RATING:** Not Evaluated

**CONTAMINANTS:** 

BTEX, Petroleum Products (heating oil)

**MEDIA OF CONCERN:** 

Soil, Groundwater

**COMPLETED IRP PHASE:** 

PA/SI, REM

**CURRENT IRP PHASE:** 

**RC** 

**FUTURE IRP PHASE:** 

RC

### PROPOSED PLAN

This site is not ER, A eligible.

# FTG-13 WESTERN SEWAGE TREATMENT PLANT (WSTP)

### SITE DESCRIPTION

This site is located in the northwestern portion of the installation. The WSTP was in operation from 1951 to 1978. The operation was a low rate, single stage trickling filter plant, followed by a secondary clarification. The waste streams entering the treatment plant consisted mainly of sanitary waste from post operations. However, during the early 1970s, the WSTP intermittently received industrial waste diverted from the Industrial Waste Treatment Plant (IWTP). An Expanded Site Inspection was performed at this site in 1994.

The soil gas samples showed localized, elevated levels of petroleum hydrocarbons and elevated trichloroethene in the east-central part of the site. No constituents were detected in the soil above the notification standards. Low concentrations of PCE were detected in a sludge drying bed. In ground water, trichloroethene above MCLs was detected in the northern and southwestern parts of the site; this compound was present in both the bedrock and saprolite at the northern property line. Ground water contamination found during the ESI and

### **STATUS**

RRSE RATING: High CONTAMINANTS:

**VOCs** 

**MEDIA OF CONCERN:** 

Groundwater

**COMPLETED IRP PHASE:** 

PA/SI

**CURRENT IRP PHASE:** 

RI/FS

**FUTURE IRP PHASE:** 

RI/FS, LTM

FY00 sampling may be attributed to an upgradient source not associated with the WSTP. TCE in excess of MCL occurs in ground water at the installation boundary. Solvents were detected in surface water off the installation and north of WSTP.

### PROPOSED PLAN

Additional sampling will be completed both on- and off-site to close data gaps and finish the RI and FS. A RI/FS Report will be prepared that will include fate and transport modeling. The FS will focus on MNA as a presumptive remedy for the site.

Continue monitoring.

### FTG-14 EASTERN SEWAGE TREATMENT PLANT (ESTP)

### SITE DESCRIPTION

The Eastern Sewage Treatment Plant (ESTP) covers approximately 10 acres of heavily wooded land and an open grassy field in the eastern portion of the installation. The ESTP operated from 1941 to 1951. Sewage treatment was by means of a trickling filter, sludge digester, and drying bed. In 1951, the Western Sewage Treatment Plant became operational and the ESTP was maintained on standby status until the early 1970s when it was closed. The ESTP handled an unknown quantity of liquid waste material during its ten years of operation.

SI sampling activities have been implemented at the ESTP at Fort Gilem during several events since 1995. These activities have included a geophysical survey, a passive soil vapor survey, completion of borings and collection of soil samples, installation of monitoring wells and collection of ground water samples, collection of ground water samples by DPT, and collection of standing water samples from ESTP structures.

### **STATUS**

**RRSE RATING: Medium** 

**CONTAMINANTS:** 

Petroleum Products, Solvents, Metals,

**Pesticides** 

**MEDIA OF CONCERN:** 

Groundwater

**COMPLETED IRP PHASE:** 

PA/SI

**CURRENT IRP PHASE:** 

RC

**FUTURE IRP PHASE:** 

RC

A screening level risk assessment has also been completed for both human and ecological receptors.

Former activities at the ESTP do not appear to have released contaminants to the environment. The ESTP has not been in use since 1951 and the remaining structures are largely overgrown with vegetation. Except for occasional visits to the site by grounds maintenance personnel, the site is unused. Groundwater has not been impacted by the ESTP. One monitoring well, located east of and cross-gradient from the site, has persistent detections of dieldrin that exceed the EPA Region IX tap water PRG. The monitoring well is located in an undeveloped grassy area, and a potential explanation for the occurrence of dieldrin is historical application by Fort Gillem personnel. Widespread usage of dieldrin post-dates the operation of the ESTP, which ended in 1951.

In May 2004, a Site Inspection (SI) Report was prepared for the ESTP that includes all data collected from the site. The SI report concluded that the site is not a source of contamination and no further action is necessary. The Army submitted the SI Report to the GA EPD in June 2004 for review.

### PROPOSED PLAN

The remaining ESTP structures are to be demolished with non-IRP funds. The SI Report requests no further action and site close-out, and has been submitted to the GA EPD for review.



### **PAST IRP MILESTONES**

1980 FTG-01 - PA/SI FTG-13, 14 - PA

1984 FTG-07 thru 11 - PA

1990 FTG-02 - PA

1991 FTG-03, 05, 06 - PA

1993 FTG-04 - SI

FTG-01 - Geophysical Survey

FTG-12 - IRA (tank removals)

1994 FTG-01 - Well Survey in March, Permanent Alternate Water Supply in June, Erosion Control Implementation in September

FTG-03 thru 06 - SI in October

1995 FTG-01 - RI in October

FTG-02, 07 thru 11, 13 - SI in October

1996 FTG-04 - IRA (Bioremediation) in January

FTG-04 - IRA in April

FTG-05 - IRA removed heating plant UST

1997 FTG-03 thru 06 - RI in August

FTG-01 - FS in September

1998 FTG-01, MOU 800 removed drums

2000 FTG-01, MOU 100 chemical oxidation pilot test

FTG-01, MOU 800 trmoved drums

Off-post investigation: north of NLA and south of SEBS

2001 FTG-01, MOU 600; excavated 27,000 tons of lead contaminated soil

FTG-01, MOU 200; excavated 100 drums and 4,000 tons of VOC-contaminated soil

Off-post investigation: north of NLA and south of SEBS

2002 FTG-01, OUA, additional geophysics and direst push, OUB-define plume, OUH-identify source, OUI-additional sampling

FTG-04, BLRA, additional samples at plume, creek samples

FTG-07, SEBS RI, additional RI for on post

FTG-09, Investigate off-post, BLRA

FTG-13, sampling to support BLRA, install 2 wells, complete BLRA

2003 FTG-01, Refine source areas

FTG-07, additional RI for on post



FTG-01, Conduct Focused Investigation of MW-48A area in support of prop ISCO KMn04 treatment. Includes Work Plan, investigation (25 DPT soil samples, GW samples, mobile lab and RI report).

FTG-07, Conduct feasibility study for FTG-07 area. This effort will add data gaps and include fate and transport groundwater modeling for FTG-07 area.

FTG-09, Conduct broad feasibility study for FTG-09 area. This effort will address data gaps and include fate and transport groundwater modeling for FTG-09 area.

### FUTURE IRP MILESTONES

IRA at FTG-01 (MOU 100, 200, 600), 07 RA at FTG-01 (MOU 100), 09 IRA at FTG-01 (MOU 100, 200, 600), 07 RA at FTG-01 (MOU 100), 09

### Remediation Activities

### COMPLETED | REM/IRA/RA:

FTG-01: Eighteen residences within one-half mile of Fort Gillem were hooked up to a municipal water supply as a precautionary action because several of their wells tested positive for contamination. All residents that were identified near Fort Gillem now utilize water obtained from this municipal water system.

FTG-01: Erosion control systems to prevent the sudden release of contaminants from the North Landfill Area during periods of excessive precipitation, have been installed and field tested under existing conditions.

FTG-04: Approximately 1,000cy of contaminated soil have been removed from the 900 Area Solvent Disposal Pit. All of the soil was remediated and tested negative for contamination.

FTG-04: Exploratory trenching was accomplished at the foot print of the former 900 Building during 1996. The purpose of the invasive survey was to determine if any adverse conditions exist at the site that would impede the construction process in this area for the new US Army Reserve Center. As a result of the investigation, the piping that was identified was removed. The Georgia Environmental Protection Division has been notified that the survey was performed and that the removal action had been accomplished. GAEPD is also aware of the Army's intent to build on the land tract.

FTG-05: Heating oil tank removed in 1996

FTG-11: File information pertaining to site FTG-11 (Unexploded Ordnance Site) alleges that the leaking bomb was decontaminated and removed in 1946. A RI was completed at the Unexploded Ordnance Site. There was no evidence of any constituents associated with the reported burial of the ordnance at this site.

FTG-01, MOU 600; excavated 27,000 tons of lead contaminated soil

FTG-01, MOU 200; excavated 100 drums and 4,000 tons of VOC-contaminated soil

### CURRENT REM/IRA/RA:

FTG-09; Burial Site No. 3, IRA: Excavted 300tons of contaminated soil

### FUTURE REM/IRA/RA:

IRA at FTG-01 (MOU 100, 200, 600), 07 RA at FTG-01(MOU 100), 09

### Community Involvement

### **RESTORATION ADVISORY BOARD STATUS**

A door to door survey was conducted in 1993 to determine if there was an interest in the Installation Restoration Program. All interested parties were sent fact sheets concerning IRP activities at Fort Gillem. A public meeting was conducted in the spring of 1994 addressing the North Landfill Area. Approximately 25 community members attended the meeting.

A community survey was conducted and ten community residents expressed an interest in touring the facility. In 1997, an invitation was sent to these ten residents and four indicated they would attend a bus tour. Unfortunately, no one showed up on the morning of the scheduled tour.

A Restoration Advisory Board survey was conducted in FY98 and 01. Fact Sheets are distributed to interested community members. There was not enough interest shown to justify forming a RAB.

An updated Community Relations Plan was finalized in January 2002. Fact Sheets are mailed semiannually to the surrounding community. Affected parties are notified of sampling events and results in person and in writing.